



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,691	01/07/2002	Jeffrey J. Folkins	D/A1301	4934

7590 02/23/2005  
Mark S. Svat  
Fay, Sharpe, Fagan,  
Minnich & McKee, LLP  
1100 Superior Avenue, 7th Floor  
Cleveland, OH 44114-2518

EXAMINER

SINGH, SATWANT K

ART UNIT PAPER NUMBER

2626

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/040,691	<b>Applicant(s)</b> FOLKINS, JEFFREY J.	
	<b>Examiner</b> Satwant K. Singh	<b>Art Unit</b> 2626	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claims 4, 5, and 8-20 are objected to because of the following informalities: All of these claims as missing a "." at the end of the claim.

Appropriate correction is required.

- 2.

### *Claim Rejections - 35 USC § 112*

1. Claims 4 and 6 recite the limitation "as set forth" in claim 3. There is insufficient antecedent basis for this limitation in the claim. It appears to the examiner that claims 4 and 6 should reference claim 1. Appropriate correction is required.

2. Claims 9 and 11 recite the limitation "as set forth" in claim 8. There is insufficient antecedent basis for this limitation in the claim. It appears to the examiner that claims 4 and 6 should reference claim 1. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or
- (2) a patent granted on an application for patent by another filed in the United States before

the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Asawaka (US 6,604,804).

5. Regarding Claim 1, Asakawa discloses a method for scheduling print operations in a print system, comprising the steps of:

a) partitioning an intermediate substrate into multiple pitch areas (Fig. 3) (swath height 32),

b) scheduling the marking of multiple page images by a marking material applicator on the multiple pitch areas, the marking of each page image being accumulated and completed during multiple passes of an assigned pitch area past the applicator (Fig. 3) (a series of pages, individually 34a-34c, pass or "advance" as a page train past the horizontal swath path 31 of print head 30),

c) beginning the marking of a first page image in a first pitch area of the multiple pitch areas during a first revolution of the intermediate substrate (Fig. 3, page 34a), and

d) beginning the marking of subsequent page images on available pitch areas of the multiple pitch areas during subsequent revolutions of the intermediate substrate, such marking being delayed from the marking of the prior page image so that the marking of two or more page images are not completed during the same revolution of said intermediate substrate (when the swath path 31 for print head 30 spans one of gaps 38 and extends far enough into the next

page 34 to contribute to printing thereat, print head 30 makes use of this lower portion of its swath height 32 to print on the next page 34) (col. 4, lines 12-24).

6. Regarding Claim 2, Asakawa discloses a method, wherein step a) partitions the intermediate substrate into two pitch areas identified as the first pitch area and a second pitch area (Fig. 3, swath path 31) (col. 4, lines 1-24).

7. Regarding Claim 3, Asakawa discloses a method, wherein the marking of each page image is accumulated and completed during four passes (Fig. 3) (swath height 32).

8. Regarding Claim 4, Asakawa discloses a method, further comprising the steps of.

e) continuing to mark the first page image in the first pitch area during a second revolution of the intermediate substrate,

f) if there are no additional page images to be marked, continuing to mark the first page image in the first pitch area during a third revolution and a fourth revolution of the intermediate substrate, otherwise continuing to mark the first page image in the first pitch area and beginning the marking of a second page image in the second pitch area during a third revolution of the intermediate substrate,

g) continuing to mark the first page image in the first pitch area and the second page image in the second pitch area during a fourth revolution of the intermediate substrate; and,

9. h) continuing to mark the second page image in the second pitch area during a fifth revolution and a sixth revolution of the intermediate substrate (The

size of a segment of the formatted data stream is expressed herein as a portion of swath height. Thus, where S equals the swath height, e.g., 3.4 inches (7.62 cm), other segments are defined as follows: Pd=partial data left in swath buffer 110 G=blank image/GAP between end of one page and beginning of next R=remainder data) (col. 7, lines 63-67, col. 8, lines 1-21).

10. Regarding Claim 5, Asakawa discloses a method, wherein at least one additional page image is to be marked on the intermediate substrate, wherein: the marking of the next page image begins in the first pitch area of the intermediate substrate during the fifth revolution of the intermediate substrate with marking continuing during three subsequent passes of the first pitch area past the marking material applicator in the same manner as the marking of the first page image, and, if additional page images are to be marked on the intermediate substrate, the marking of each additional page image begins two revolutions after the revolution in which the previous page image marking began, wherein the marking of consecutive page images continues to alternate between the first pitch area and the second pitch area in the same manner as described for the first and second page images (The size of a segment of the formatted data stream is expressed herein as a portion of swath height. Thus, where S equals the swath height, e.g., 3.4 inches (7.62 cm), other segments are defined as follows: Pd=partial data left in swath buffer 110 G=blank image/GAP between end of one page and beginning of next R=remainder data) (col. 7, lines 63-67, col. 8, lines 1-21).

11. Claim 6 is rejected for the same reason as claim 4.

12. Claim 7 is rejected for the same reason as claim 5.

13. Regarding Claim 8, Asakawa discloses a method, wherein the marking of each page image is accumulated and completed during six passes (The size of a segment of the formatted data stream is expressed herein as a portion of swath height. Thus, where S equals the swath height, e.g., 3.4 inches (7.62 cm), other segments are defined as follows: Pd=partial data left in swath buffer 110 G=blank image/GAP between end of one page and beginning of next R=remainder data) (col. 7, lines 63-67, col. 8, lines 1-21).

14. Regarding Claim 9, Asakawa discloses a method, further comprising the steps of: e) continuing to mark the first page image in the first pitch area during a second revolution and a third revolution of the intermediate substrate, f) if there are no additional page images to be marked, continuing to mark the first page image in the first pitch area during a fourth revolution, a fifth revolution, and a sixth revolution of the intermediate substrate, otherwise continuing to mark the first page image in the first pitch area and beginning the marking of a second page image in the second pitch area during a fourth revolution of the intermediate substrate, g) continuing to mark the first page image in the first pitch area and the second page image in the second pitch area during a fifth revolution and a sixth revolution of the intermediate substrate; and, h) continuing to mark the second page image in the second pitch area during a seventh revolution, an eighth revolution, and a ninth revolution of the intermediate substrate (The size of a segment of the formatted data stream is expressed herein as a portion of swath height. Thus, where S equals the swath height, e.g., 3.4 inches (7.62 cm), other

Art Unit: 2626

segments are defined as follows: Pd=partial data left in swath buffer 110 G=blank image/GAP between end of one page and beginning of next R=remainder data) (col. 7, lines 63-67, col. 8, lines 1-21).

15. Regarding Claim 10, Asakawa discloses a method, wherein at least one additional page image is to be marked on the intermediate substrate, wherein: the marking of the next page image begins in the first pitch area of the intermediate substrate during the seventh revolution of the intermediate substrate with marking continuing during five subsequent passes of the first pitch area past the marking material applicator in the same manner as the marking of the first page image, and, if additional page images are to be marked on the intermediate substrate, the marking of each additional page image begins three revolutions after the revolution in which the previous page image marking began, wherein the marking of consecutive page images continues to alternate between the first pitch area and the second pitch area in the same manner as described for the first and second page images (The size of a segment of the formatted data stream is expressed herein as a portion of swath height. Thus, where S equals the swath height, e.g., 3.4 inches (7.62 cm), other segments are defined as follows: Pd=partial data left in swath buffer 110 G=blank image/GAP between end of one page and beginning of next R=remainder data) (col. 7, lines 63-67, col. 8, lines 1-21).

16. Regarding Claim 11, Asakawa discloses a method, further comprising the steps of: e) continuing to mark the first page image in the first pitch area during a second revolution of the intermediate substrate; f) if there are no additional page



images to be marked, continuing to mark the first page image in the first pitch area during a third, a fourth, a fifth, and a sixth revolution of the intermediate substrate, otherwise continuing to mark the first page image in the first pitch area and beginning the marking of a second page image in the second pitch area during a third revolution of the intermediate substrate, g) continuing to mark the first page image in the first pitch area and the second page image in the second pitch area during a fourth, a fifth, and a sixth, revolution of the intermediate substrate; and, h) continuing to mark the second page image in the second pitch area during a seventh revolution and an eighth revolution of the intermediate substrate (The size of a segment of the formatted data stream is expressed herein as a portion of swath height. Thus, where S equals the swath height, e.g., 3.4 inches (7.62 cm), other segments are defined as follows: Pd=partial data left in swath buffer 110 G=blank image/GAP between end of one page and beginning of next R=remainder data) (col. 7, lines 63-67, col. 8, lines 1-21).

17. Regarding Claim 12, Asakawa discloses a method, wherein at least one additional page image is to be marked on the intermediate substrate, wherein, the marking of the next page image begins in the first pitch area of the intermediate substrate during the seventh revolution of the intermediate substrate with marking continuing during five subsequent passes of the first pitch area past the marking material applicator in the same manner as the marking of the first page image, and, if additional page images are to be marked on the intermediate substrate, the beginning of marking of additional page images continues to alternate between two revolutions after the revolution in which the previous page

Art Unit: 2626

image marking began and four revolutions after the revolution in which the previous page image marking began in the same manner as described for the first, second, and third page images, wherein the marking of consecutive page images also continues to alternate between the first pitch area and the second pitch area in the same manner as described for the first and second page images (The size of a segment of the formatted data stream is expressed herein as a portion of swath height. Thus, where S equals the swath height, e.g., 3.4 inches (7.62 cm), other segments are defined as follows: Pd=partial data left in swath buffer 110 G=blank image/GAP between end of one page and beginning of next R=remainder data) (col. 7, lines 63-67, col. 8, lines 1-21).

18. Claims 13 and 14 are rejected for the same reason as claim 1.

19. Regarding Claim 15, Asakawa discloses a system, wherein said intermediate substrate is selected from the group consisting of a rotating drum and a moving belt (Fig. 4).

20. Regarding Claim 16, Asakawa discloses a system, wherein said print system is an ink-jet print system and said marking material applicator is an ink-jet print head (FIGS. 4-9 illustrate implementation of the present invention with respect to a printer 100 including an ink-ejecting print head 130)(col. 5, lines 20-22).

21. Claim 17 is rejected for the same reason as claim 16.

22. Regarding Claim 18, Asakawa discloses a system, wherein said print head marks a one quarter resolution swath of the page image in an assigned pitch area of said intermediate substrate during each of four consecutive passes

Art Unit: 2626

of said intermediate substrate past said print head, accumulating and completing the page image in the four passes and wherein the controller moves the print head in cross-process direction after each pass to position the print head for the next pass (The size of a segment of the formatted data stream is expressed herein as a portion of swath height. Thus, where S equals the swath height, e.g., 3.4 inches (7.62 cm), other segments are defined as follows: Pd=partial data left in swath buffer 110 G=blank image/GAP between end of one page and beginning of next R=remainder data) (col. 7, lines 63-67, col. 8, lines 1-21).

23. Regarding Claim 19, Asakawa discloses a system, wherein said print head marks a one sixth resolution swath of the page image in an assigned pitch area of said intermediate substrate during each of six consecutive passes of said intermediate substrate past said print head, accumulating and completing the page image in the six passes and wherein the controller moves the print head in cross-process direction after each pass to position the print head for the next pass (The size of a segment of the formatted data stream is expressed herein as a portion of swath height. Thus, where S equals the swath height, e.g., 3.4 inches (7.62 cm), other segments are defined as follows: Pd=partial data left in swath buffer 110 G=blank image/GAP between end of one page and beginning of next R=remainder data) (col. 7, lines 63-67, col. 8, lines 1-21).

***Claim Rejections - 35 USC § 103***

24. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2626

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

25. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asawaka in view of Umetani et al (US 6,6125,258).

26. Regarding Claim 20, Asawaka fails to teach a system, wherein said print system is a xerographic print system, wherein said marking material applicator includes a developer station using a toner mixture to mark said intermediate substrate.

Umetani et al teach a system, wherein said print system is a xerographic print system, wherein said marking material applicator includes a developer station using a toner mixture to mark said intermediate substrate (present invention relates to an image forming apparatus such as copiers and printers using an electrophotographic process or electrostatic recording process, and more particularly, to a color image forming apparatus capable of obtaining a full-color image or a multi-color image by transferring a plurality of visible images (also called toner images) of different colors to the same transfer material so as to be superimposed sequentially) (col. 1, lines 5-12).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have combined the teachings of Asawaka with the teaching of Umetani to allow the users of xerographic print system to print on two pages concurrently.

***Conclusion***

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nishimura (US 6,009,296) discloses a multicolor image formation device.

Enderle et al. (US 6,050,191) disclose a system and method for providing multi-pass imaging in a printing system.

Vinals et al. (US 6,565,192) disclose printing with multiple passes.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satwant K. Singh whose telephone number is (703) 306-3430. The examiner can normally be reached on Monday thru Friday 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A. Williams can be reached on (703) 305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Satwant Singh*

sks

Satwant K. Singh  
Examiner  
Art Unit 2626

*KA Williams*  
**KIMBERLY WILLIAMS**  
**SUPERVISORY PATENT EXAMINER**